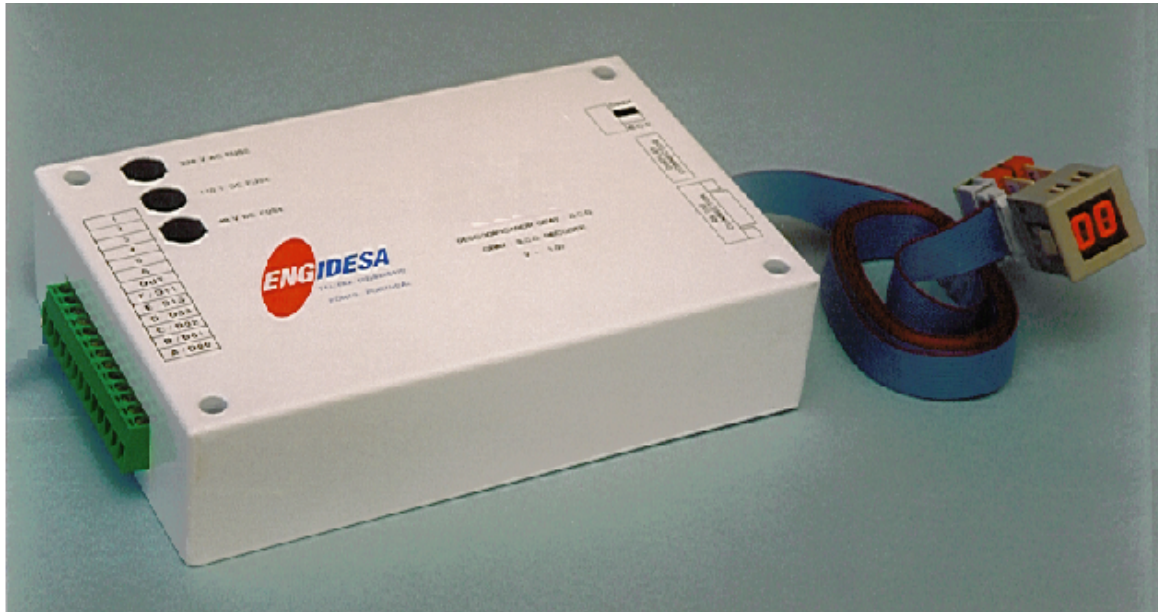


BCD/GRAY Decoder *Users Manual*



Contents

1	Description	1
2	Tecnical Specification	2
2.1	GRAY/BCD Selector	2
2.2	Code Line Input	2
2.3	Outputs	2
2.4	Display connector	3
2.5	RS-232 connector	3
2.6	Power Supply	3
2.7	Operating Conditions	4
2.8	Dimentiones	4
3	Instalation	4

1 Description

- Gray/B.C.D. Decoder is a electronic device specially designed to handle the information supplied by Gray/B.C.D. encoders.
- It's conceived as a compact and sturdy device, in order to make it's application extremelly reliable.

- The stainless steel casing is painted, labelled and outfitted with plug-in connectors to enable handling of the device without disconnecting wires.
- Can be powered by 220 VAC, 110/125 VDC or 48 VDC, having three protected inputs for each type of power supply.
- Has a special output to provide encoder's power.
- The signal inputs are insulated by optocouplers and the device is galvanically insulated from the power supply. This way it's safe to handle the display outputs (protected themselves from short-circuits).
- The display is constituted by two seven-segment digits, encapsulated in a plug-in plastic box, and is connected to the decoder by a flat-cable provided with two sockets to make the handling an easy process.
- A switch makes the Gray/B.C.D. selection, available from outside, and it's possible to change the coding with the device turned on.
- The device is provided with a RS-232 port with a DB-9 connector, where the decoded number is transmitted continuously, in binary format (1200,n,8,1).

2 Technical Specification

Gray/B.C.D. decoder is an electronic circuit on a metallic box with part, inputs, outputs and power identification. Contains also a panel mount display and a connector flat-cable. Allows decoding to 35 inputs positions, in BCD or Gray code of 6 bits.

2.1 GRAY/BCD Selector

Gray/BCD selection is made by a labelled two position commuter:

- In order to select GRAY decoding, switch commutator to GRAY position.
- In order to select B.C.D. decoding, switch commutator to BCD position.

2.2 Code Line Input

- Labeled from *A/D00* to *F/D11* (See Table 1);
- Input Voltage equal or less than *125VDC*;
- Active State (*1*) greater than *40 VDC*;
- Inactive State (*0*) lower than *12 VDC*;

2.3 Outputs

Encoder power supply output with voltage according to input supply (See Table 2).

2.4 Display connector

Is provided a 14-pin flat cable male socket for two 7-segment display connection.

2.5 RS-232 connector

Is also provided a DB-9 male socket, configured as a DTE (Data Terminal Equipment) (See table 3) continuously transmitting the decoded number in unsigned binary format, of 1200 baud, no parity, one start bit, eight bits length and one stop bit. This feature is suitable for automation needs.

2.6 Power Supply

There are three input power connector protected by fuses. Preferentially, fuses from non used inputs should be removed, using only one of the three available power supply inputs. Connections must be made according to Figure 1.

Code Line	<i>GRAY</i>	<i>BCD</i>
A/D00	LSB - least significant bit of GRAY code of 6 bits	LSB0 - least significant bit of first digit of two digits BCD code
B/D01	2nd bit of 6 bits GRAY code	2nd bit of the first digit from 2 digit BCD code.
C/D02	3rd bit of 6 bits GRAY code	3rd bit of the first digit from 2 digit BCD code.
D/D03	4th bit of 6 bits GRAY code	MSB - most significant bit of first digit of two digits BCD code.
E/D10	5th bit of 6 bits GRAY code	LSB 0 - least significant bit of second digit of two digits BCD code.
F/D11	MSB - most significant bit of GRAY code of 6 bits	MSB - most significant bit of second digit of two digits BCD code.

Table 1: Code Inputs

Input Power Supply	Output Voltage (a)
220 VAC	110 VDC
110 VDC	110 VDC
48 VDC	48 VDC

(a) - This output must be measured in reference to terminal 6.

Table 2: Output

Pin	Signal
3	TXD (Transmit Data)
5	SG (Common)

Table 3: RS-232 Connections

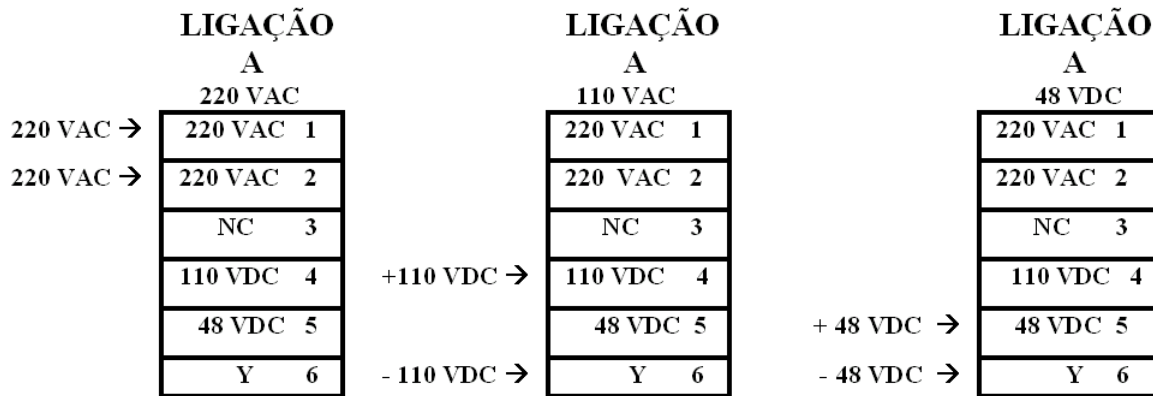


Figure 1: Input Connections

2.7 Operating Conditions

- Working Ambient Temperature from 0 to 40°C.
- Protected environment from atmospheric agents.

2.8 Dimentions

External Dimentions - 190 x 124 x 48 (L x W x H) mm

Weight - 1150g

Display - 24 x 24 mm

Flat-Cable - 1,5 m

3 Instalation

Decoder Fixation - Fixation is made by four projected screws.

Connections - Must be made using available fixed connectors.

Display fixation and connection - Display must be fitted on a 24x24mm opening, and connected to decoder by the available flat-cable.

On Figure 2 (BCD) and Figure 3 (GRAY) are shown usual connection diagrams (*shown here as a exemplificative design*).

AB - SINALIZAÇÃO DE REGULADOR NA POS. 2 / - POSITION 2 OF O.L.T.C. SIGNALISATION
 AA - SINALIZAÇÃO DE REGULADOR NA POS. N-1 / - POSITION N-1 OF O.L.T.C. SIGNALISATION
 N - NUMERO DE POSIÇÕES DO REGULADOR / - NUMBER OF POSITIONS (O.L.T.C.)

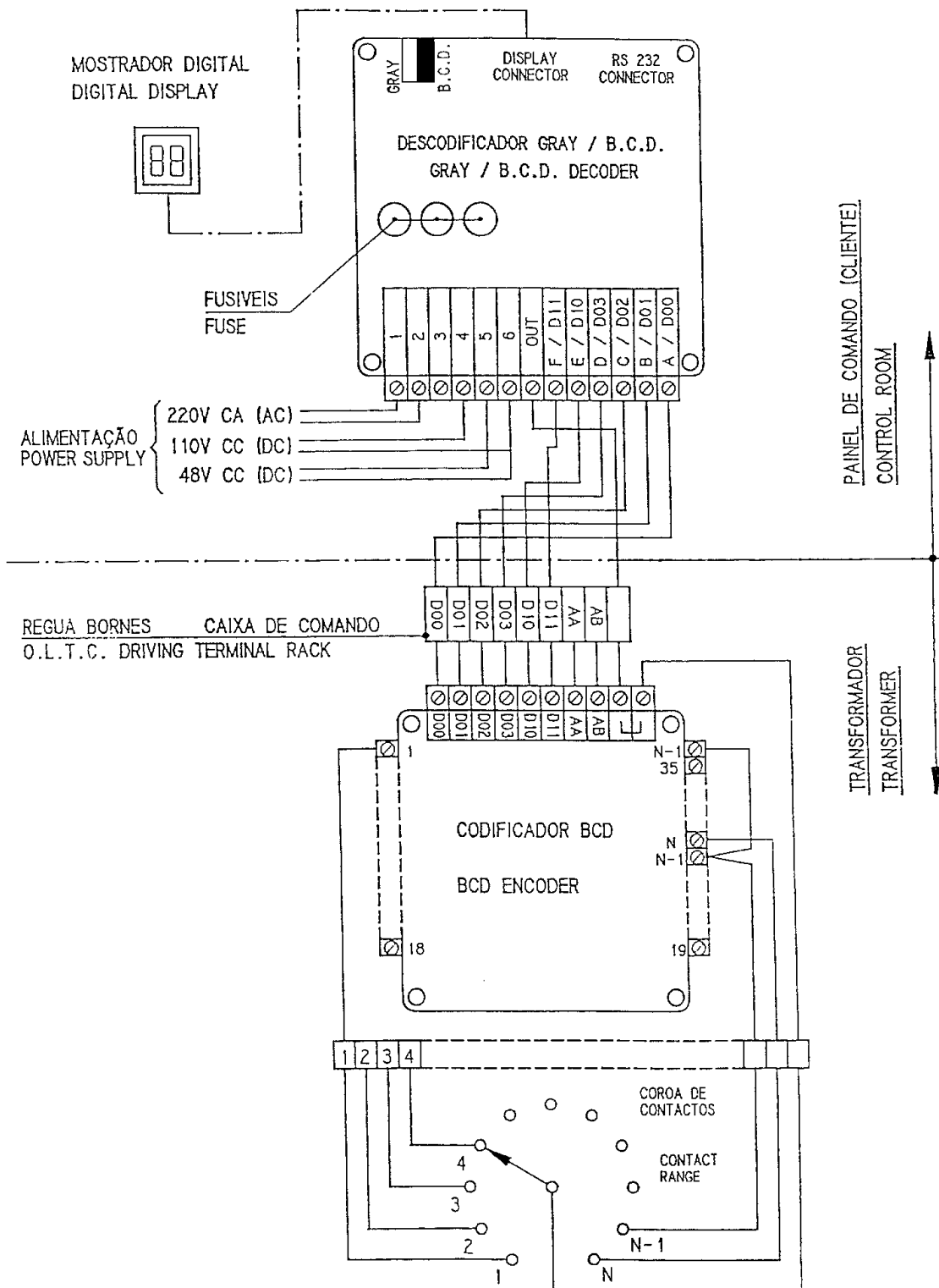


Figure 2: BCD Connection Diagram

AB - SINALIZAÇÃO DE REGULADOR NA POS. 2 / - POSITION 2 OF O.L.T.C. SIGNALISATION
 AA - SINALIZAÇÃO DE REGULADOR NA POS. N-1 / - POSITION N-1 OF O.L.T.C. SIGNALISATION
 N - NUMERO DE POSIÇÕES DO REGULADOR / - NUMBER OF POSITIONS (O.L.T.C.)

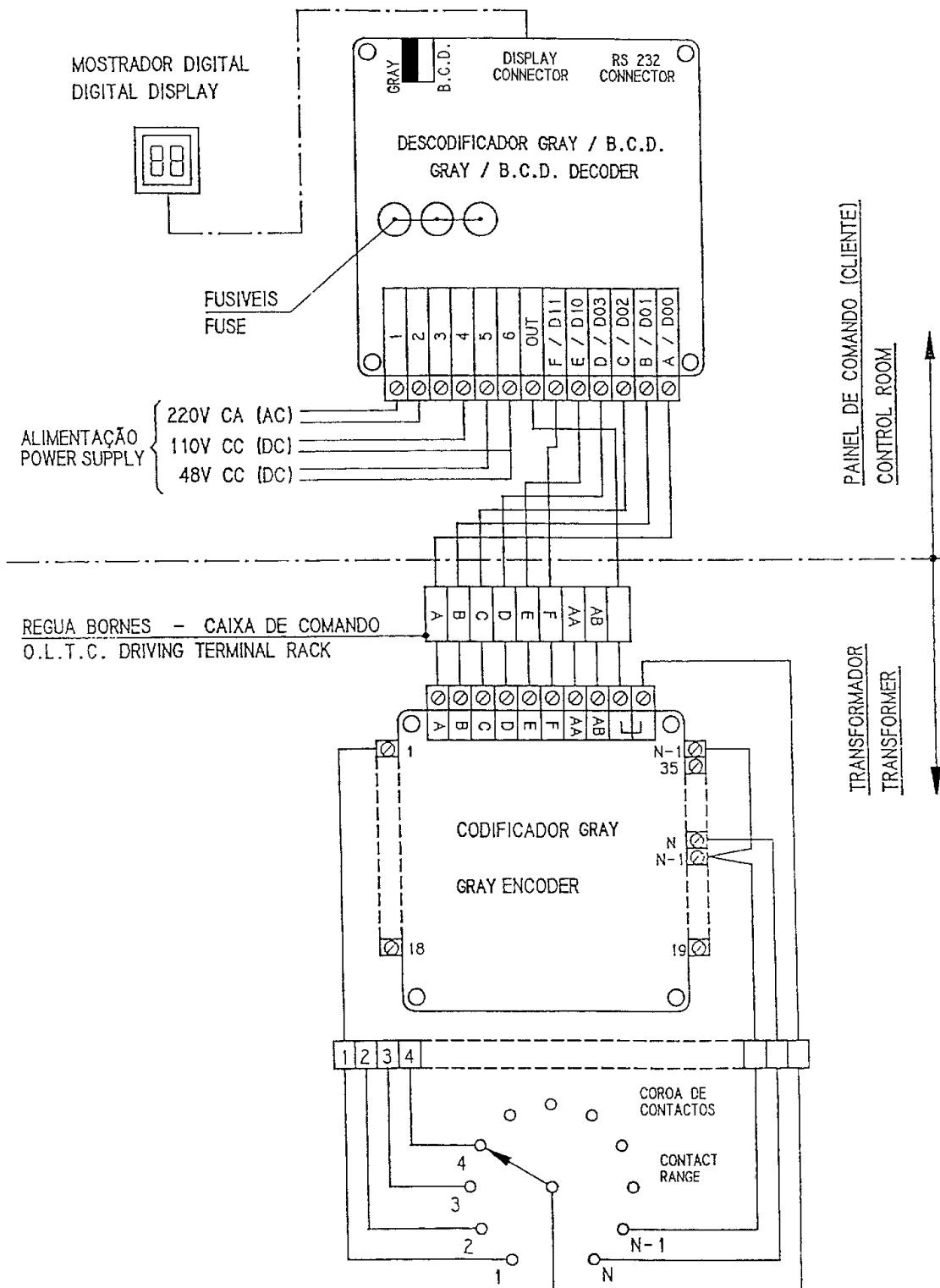


Figure 3: GRAY Connection Diagram